

**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US04/15587

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : C07H 21/04; C12Q 1/68  
US CL : 435/6; 536/23.1

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
U.S. : 435/6; 536/23.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 392 546 A2 (DRMANAC et al.) 12 April 1990 (12.04.1990), see entire document.	1-6, 13-15
X	GHOSH et al. Covalent attachment of oligonucleotides to solid supports. Nucleic Acids Research. 1987, Vol. 15, No 13, pages 5353-5372, see entire document.	1-6, 13-15
X, P	US 2003/0129640 A1 (SASAKI et al.) 10 July 2003 (10.07.2003), see entire document.	1-16
X, P	US 2004/0185484 A1 (COSTA et al) 23 September 2004 (23.09.2004), see entire document, especially para 94-105.	35-54
Y, P	US 6,808,882 B2 (GRIFFITHS et al) 26 October 2004 (26.10.2004), see entire document.	35-54
Y	WO 00/40712 A1 (GRIFFITHS et al.) 13 July 2000 (13.07.2000), see entire document.	35-54

Further documents are listed in the continuations of Box C.

See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"B" earlier application or patent published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

22 February 2005 (22.02.2005)

Date of mailing of the international search report

27 MAY 2005

Name and mailing address of the ISA/US

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**BOX III. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING**

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s) 1-34, drawn to a composition comprising a plurality of beads wherein the beads comprise polynucleotides.

Group II, claim(s) 35-54, drawn to a method for analyzing nucleotide sequence variations by forming microemulsions.

Group III, claim(s) 55-58, drawn to probes and pairs of probes.

Group IV, claim(s) 59-63, drawn to a method for isolating nucleotide sequence variants.

The inventions listed as Groups I-IV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons.

The prior art teaches a composition comprising a plurality of beads where the beads comprise polynucleotides, therefore, this is not a contribution over the art.

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**Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)**

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:

## a. type of material

a sequence listing  
 table(s) related to the sequence listing

## b. format of material

in written format  
 in computer readable form

## c. time of filing/furnishing

contained in the international application as filed  
 filed together with the international application in computer readable form  
 furnished subsequently to this Authority for the purposes of search

2.  In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional comments:

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I  
P

### Box No. II Observations where certain claims were found unsearchable (Continuation sheet)

This international search report has not been established in respect of certain claims under Article 14(3)(a) of the PCT.

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority.
  
2.  Claims Nos.:  
because they relate to parts of the international application that do not comply to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the search requirements.

### Box No. III Observations where unity of invention is lacking (Continuation sheet)

This International Searching Authority found multiple inventions in this international application.  
Please See Continuation Sheet

1.  As all required additional search fees were timely paid by the applicant, this invention is covered by the claims.
2.  As all searchable claims could be searched without effort justifying an additional payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this invention is covered only those claims for which fees were paid, specifically claims Nos.: 1-10.
  
4.  No required additional search fees were timely paid by the applicant. Consequently, the invention is restricted to the invention first mentioned in the claims; it is covered by claim 1.

Remark on Protest  The additional search fees were accompanied by the application.  
 No protest accompanied the payment of additional search fees.